

DRAFT

Appl. No. 10/028,245
Amdt. dated October 24, 2005
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IN THE CLAIMS:

1. (Cancelled)
2. (Currently Amended) An isolated polynucleotide encoding a fungal glycosyl hydrolase Family 5 endoglucanase enzyme having endoglucanase activity selected from the group consisting of:

(a) a nucleic acid sequence which encodes or is complementary to a sequence which encodes an EGVIII polypeptide having at least 98% sequence identity to the amino acid sequence presented in SEQ ID NOs:3 and 2 as shown in Figure 2;

~~(b) a nucleic acid sequence which encodes or is complementary to a sequence which encodes an EGVIII polypeptide having at least 90% sequence identity to the amino acid sequence presented in SEQ ID NOs:3 and 2 as shown in Figure 2;~~

~~(c) a nucleic acid sequence which encodes or is complementary to a sequence which encodes an EGVIII polypeptide having at least 95% sequence identity to the amino acid sequence presented in SEQ ID NOs:3 and 2 as shown in Figure 2;~~

~~(cd) a nucleic acid sequence which encodes or is complementary to a sequence which encodes an EGVIII polypeptide having the amino acid sequence presented in SEQ ID NOs:3 and 2 as shown in Figure 2;~~

~~(de) a nucleic acid sequence which encodes or is complementary to a sequence which encodes an EGVIII polypeptide having at least 95% sequence identity to the amino acid sequence presented as SEQ ID NO:2;~~

~~(ef) a nucleic acid sequence which encodes or is complementary to a sequence which encodes an EGVIII polypeptide having the amino acid sequence presented as SEQ ID NO:2; and~~

(fg) a nucleic acid sequence presented as SEQ ID NO:4, or the complement thereof; wherein % identity is calculated using the CLUSTAL-W program in MacVector version 6.5, operated with default parameters, including an open gap penalty of 10.0, an extended gap penalty of 0.1, and a BLOSUM 30 similarity matrix.

3. (Cancelled)
4. (Currently Amended) An isolated polynucleotide that hybridizes, under high stringency conditions to the sequence presented as SEQ ID NO:4, or the complement or a fragment

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thereof, wherein said isolated polynucleotide encodes a polypeptide having the biological activity of an endoglucanase, wherein hybridization is conducted at 42°C in 50% formamide, 6X SSC, 5X Denhardt's solution, 0.5% SDS and 100 µg/ml denatured carrier DNA followed by washing two times in 2X SSPE and 0.5% SDS at room temperature and two additional times in 0.1 SSPE and 0.5% SDS at 42°C.

5. (Original) The isolated polynucleotide of Claim 2, wherein said polynucleotide is an RNA molecule.
6. (Previously Amended) The isolated polynucleotide of claim 2 encoding an enzyme having endoglucanase activity, wherein the enzyme is isolated from a *Trichoderma* source.
7. (Previously Amended) The isolated polynucleotide of Claim 6, wherein the enzyme is isolated from *Trichoderma reesei*.
8. (Currently Amended) An expression construct comprising a polynucleotide sequence encoding an amino acid sequence having endoglucanase activity and (i) having at least 9585% sequence identity to the amino acid sequence presented in SEQ ID NO:2, or (ii) being capable of hybridizing to a probe designed to hybridize with the nucleotide sequence disclosed in SEQ ID NO:1 under conditions of high stringency, or (iii) being complementary to a nucleotide sequence having at least 9585% sequence identity to a nucleotide sequence encoding the amino acid sequence presented in SEQ ID NO:2.
9. (Previously Amended) A vector comprising the expression construct of Claim 8.
10. (Original) A vector comprising an isolated polynucleotide of Claim 2, operably linked to control sequences recognized by a host cell transformed with the vector.
11. (Original) A host cell transformed with the vector of Claim 9.
12. (Original) A host cell transformed with the vector of Claim 10.
13. (Original) The host cell of Claim 12, which is a prokaryotic cell.
14. (Original) The host cell of Claim 12, which is a eukaryotic cell.
15. (Original) A recombinant host cell comprising a polynucleotide of Claim 2.
16. (Original) The recombinant host cell of Claim 15, which is a prokaryotic cell.
17. (Original) The recombinant host cell of Claim 15, which is a eukaryotic cell.
18. (Cancelled)
19. (Original) A method of producing an enzyme having endoglucanase activity,

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comprising:

- (a) stably transforming a host cell with an expression vector comprising a polynucleotide as defined in Claim 2;
 - (b) cultivating said transformed host cell under condition suitable for said host cell to produce said endoglucanase; and
 - (c) recovering said endoglucanase.
20. (Original) The method of Claim 19 wherein the host cell is a filamentous fungi or yeast cell.
21. (Cancelled)
22. (Previously Amended) A recombinant host cell comprising a deletion or insertion or other alteration in the *egl8* gene encoding the polypeptide presented in SEQ ID NO:2 which inactivates the gene and prevents EGVIII polypeptide production.
23. (Previously Amended) An antisense oligonucleotide complementary to a messenger RNA that encodes an EGVIII polypeptide having the sequence presented as SEQ ID NO:2, wherein upon exposure to a endoglucanase-producing host cell, said oligonucleotide inhibits the production of endoglucanase by said host cell.
24. (Original) The antisense oligonucleotide of Claim 23, wherein the host cell is a filamentous fungi.
25. (Cancelled)
26. (Previously Amended) A method of expressing a heterologous polypeptide having endoglucanase activity in an *Aspergillus* species, comprising:
- (a) Providing a host *Aspergillus* with an expression vector comprising a polynucleotide encoding a signal sequence linked to a polynucleotide encoding a heterologous fungal endoglucanase EG VIII according to Claim 2, thereby encoding a chimeric polypeptide;
 - (b) Cultivating said host *Aspergillus* under conditions suitable for said *Aspergillus* to produce said chimeric polypeptide, wherein said chimeric polypeptide is produced.
- 27 – 36. (Cancelled)